



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1460  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/672,204

09/26/2003

Yigal Bejerano

Y. BEJARANO 2-48

8936

47394

7590

10/23/2006

HITT GAINES, PC  
LUCENT TECHNOLOGIES INC.  
PO BOX 832570  
RICHARDSON, TX 75083

EXAMINER

URICK, MATTHEW T

ART UNIT

PAPER NUMBER

2113

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/672,204	BEJERANO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Matt Urick	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,7 and 13-19 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/26/03 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Final Rejection***

***Status of the Claims***

Claims 1-5, 8-12 are rejected under 35 USC 103

Claims 6, 7, and 13-19 are allowable

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cihula (United States Patent Application Publication 2002/0143914 A1) in view of Mauro (*Essential SNMP, First Edition*).

As per claim 1, Cihula discloses:

A system for monitoring link delays and faults in an IP network, comprising:  
a monitoring station identifier that computes a set of monitoring stations that covers links in at least a portion of said network (§ 34: monitoring agent); and

Cihula does not disclose:

a probe message identifier, coupled to said monitoring station identifier, that computes a set of probe messages to be transmitted by at least ones of said set of monitoring stations such that said delays and faults in specific links spanning said set of monitoring stations can be determined.

Art Unit: 2113

Cihula discloses that his monitoring agent may make use of Simple Network Management Protocol (SNMP) or any other network management protocol (§ 34) to monitor the network. SNMP contains means for polling remote devices and network connections for traffic problems and other issues (Mauro: "Polling and Thresholds" § 1). A poll message is sent to a device, and the device replies with management information, which is collected and examined for compliance with thresholds. Mauro discloses that this polling method can detect capacity issues as well as faults in specific connections (interfaces) (Mauro § 1 lines 2-4). This polling method will easily perform the required monitoring as specified by Cihula. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate polling with SNMP into the monitoring agent system of Cihula, to monitor network traffic.

As per claim 2, Cihula discloses:

The system as recited in claim 1 wherein said set of monitoring stations is a minimal set (§ 34: where one monitoring agent is the minimal set).

As per claim 3, Cihula discloses:

The system as recited in claim 1 wherein said set of probe messages is a minimal set.

Cihula discloses that his monitoring agent may make use of Simple Network Management Protocol (SNMP) or any other network management protocol (§ 34) to monitor the network. SNMP contains means for polling remote devices and network

Art Unit: 2113

connections for traffic problems and other issues (Mauro: "Polling and Thresholds" ¶ 1).

The user may specify the poll interval, taking into account such factors as bandwidth restrictions and importance of the components being polled (Mauro: "Polling and Thresholds" ¶ 7 - ¶ 8), so user decides the minimal set of polling messages. This polling method will easily perform the required monitoring as specified by Cihula. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate polling with SNMP into the monitoring agent system of Cihula, to monitor network traffic.

As per claim 4, Cihula discloses:

The system as recited in claim 1 wherein said set of monitoring stations covers links in an entirety of said network (¶ 34 monitoring agent monitors network 102).

As per claim 8, Cihula discloses:

A method of monitoring link delays and faults in an IP network, comprising:  
computing a set of monitoring stations that covers links in at least a portion of said network (¶ 34: monitoring agent); and

computing a set of probe messages to be transmitted by at least ones of said set of monitoring stations such that said delays and faults in specific links spanning said set of monitoring stations can be determined.

Cihula discloses that his monitoring agent may make use of Simple Network Management Protocol (SNMP) or any other network management protocol (¶ 34) to

Art Unit: 2113

monitor the network. SNMP contains means for polling remote devices and network connections for traffic problems and other issues (Mauro: "Polling and Thresholds" ¶ 1). A poll message is sent to a device, and the device replies with management information, which is collected and examined for compliance with thresholds. Mauro discloses that this polling method can detect capacity issues as well as faults in specific connections (interfaces) (Mauro ¶ 1 lines 2-4). This polling method will easily perform the required monitoring as specified by Cihula. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate polling with SNMP into the monitoring agent system of Cihula, to monitor network traffic.

As per claim 9, Cihula discloses:

The method as recited in claim 8 wherein said set of monitoring stations is a minimal set (¶ 34: where one monitoring agent is the minimal set).

As per claim 10, Cihula discloses:

The method as recited in claim 8 wherein said set of probe messages is a minimal set.

Cihula discloses that his monitoring agent may make use of Simple Network Management Protocol (SNMP) or any other network management protocol (¶ 34) to monitor the network. SNMP contains means for polling remote devices and network connections for traffic problems and other issues (Mauro: "Polling and Thresholds" ¶ 1). The user may specify the poll interval, taking into account such factors as bandwidth

Art Unit: 2113

restrictions and importance of the components being polled (Mauro: "Polling and Thresholds" ¶ 7 - ¶ 8), so user decides the minimal set of polling messages. This polling method will easily perform the required monitoring as specified by Cihula. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate polling with SNMP into the monitoring agent system of Cihula, to monitor network traffic.

As per claim 11, Cihula discloses:

The method as recited in claim 8 wherein said set of monitoring stations covers links in an entirety of said network (¶ 34 monitoring agent monitors network 102).

Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cihula (United States Patent Application Publication 2002/0143914 A1) in view of Mauro (*Essential SNMP, First Edition*) as applied above, and in further view of Perlman (*Interconnections: Bridges, Routers, Switches and Internetworking Protocols, Second Edition*).

As per claim 5, Cihula and Mauro fail to disclose:

The system as recited in claim 1 wherein said probe messages have a selected one of:

identical message costs, and

message costs that are based on a number of hops to be made by said probe messages.

Perlman discloses that network routers include a "time-to-live" (TTL) tag when sending packets across the network to prevent messages from being forwarded indefinitely (Perlman: "Hop Count" ¶ 4 - ¶ 6). Cihula discloses that his invention is implemented in a packetized network including routers (¶ 34), and Mauro discloses that SNMP polling can be used to poll routers (Mauro: "Polling and Thresholds" ¶ 7). If routers are used, they automatically attach the TTL tag to each message, including the polling messages, to ensure that messages are not infinitely forwarded across the network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate TTL tags into the systems of Cihula and Mauro, to prevent indefinite message forwarding in the network.

As per claim 12, Cihula and Mauro fail to disclose:

The method as recited in claim 8 wherein said probe messages have a selected one of: identical message costs, and message costs that are based on a number of hops to be made by said probe messages.

Perlman discloses that network routers include a "time-to-live" (TTL) tag when sending packets across the network to prevent messages from being forwarded indefinitely (Perlman: "Hop Count" ¶ 4 - ¶ 6). Cihula discloses that his invention is implemented in a packetized network including routers (¶ 34), and Mauro discloses that SNMP polling can be used to poll routers (Mauro: "Polling and Thresholds" ¶ 7). If



Art Unit: 2113

routers are used, they automatically attach the TTL tag to each message, including the polling messages, to ensure that messages are not infinitely forwarded across the network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate TTL tags into the systems of Cihula and Mauro, to prevent indefinite message forwarding in the network.

***Response to Arguments***

Applicant's arguments filed 8/14/06 have been fully considered but they are not persuasive.

On pages 9-11 of the Remarks, in regard to claim 1, applicant argues that Cihula does not disclose: "said delays and faults in specific links spanning said set of monitoring stations can be determined" Applicant's arguments have been considered but are moot in view of the rejection. This limitation is taught by Mauro.

Mauro ¶ 1 states: "For example, you might want to be notified if the traffic at an interface jumps to an extremely high (or low) value; that event might signal a problem with the interface, or insufficient capacity, or even a hostile attack on your network." This discloses that the polling system of Mauro is capable of detecting faults or capacity issues at specific links (interfaces) in a network.

On pages 11-12 of the Remarks, in regard to claim 1, applicant argues that Mauro does not address the specific language of claim 1. Specifically, the limitation: "[a probe message identifier] that computes a set of probe messages."

The cited reference – Mauro ¶ 1 – clearly states: "SNMP gives you the ability to poll your devices regularly, collecting their management information. Furthermore, you can tell the NMS [network management system] that there are certain thresholds that, if crossed, require some sort of action." Mauro ¶ 1 also states: "To make this more concrete, let's say that the NMS is polling the status of an interface on a router. If the

interface goes down, the NMS reports what has happened so the problem can be quickly resolved.”

Applicant claims the limitation “[a probe message identifier] computes a set of probe messages.” The polling system, which returns the management information can be considered a probe message. The devices are probed – or polled –and return probe messages containing management information. That information is then analyzed – or computed – to determine whether or not a threshold has been exceeded.

Furthermore, examiner respectfully disagrees with applicant’s statement that the language of claim 1 was not addressed. The previous office action stated “SNMP contains means for polling remote devices for traffic problems and other issues” followed by a citation for Mauro ¶ 1. This rejection clearly points out the limitation of claim 1, and the corresponding section of the reference.

On page 12 of the remarks, applicant argues that Mauro does not disclose the limitation “said delays and faults in specific links spanning said set of monitoring stations can be determined.” Examiner respectfully disagrees.

Mauro ¶ 1 states: “For example, you might want to be notified if the traffic at an interface jumps to an extremely high (or low) value; that event might signal a problem with the interface, or insufficient capacity, or even a hostile attack on your network.” This discloses that the polling system of Mauro is capable of detecting faults or capacity issues at specific links (interfaces) in a network.

On page 12-13 of the remarks, applicant argues that one of ordinary skill in the art would not be motivated to combine the disclosures of Cihula and Mauro to arrive at the invention of claim 1.

The motivation to combine Cihula and Mauro was cited in Cihula ¶ 34, where Cihula discloses: "The monitoring agent 155 may use any well-known network management protocol to communicate within the network, such as Simple Network Management Protocol (SNMP)..." This is considered sufficient suggestion to combine SNMP as disclosed by Mauro into the invention of Cihula.

Applicant also argues that Cihula discloses a "generalized policy implementation system" and would not require determining delays and faults "in specific links spanning a set of monitoring stations." Examiner respectfully disagrees.

Cihula ¶ 32 discloses that the invention stores dynamic network information such as "topology, error rates, response times, and the like for the router, the switch, the hub, and the links between the devices." Cihula ¶ 34 discloses that "...the dynamic network information includes at least one monitoring agent" and "the monitoring agent may generate statistical information about the network and its devices...[using] SNMP"

Therefore, the system of Cihula keeps track of – among other things – the response times and error rates of links in the network. Cihula also discloses that this may be done using a monitoring agent, which uses SNMP. The polling method disclosed by Mauro is how SNMP would accomplish such a task. This is considered sufficient motivation to combine the polling system of Mauro with the management system of Cihula.

Art Unit: 2113

The rejection of claim 8 is maintained under the same grounds as the rejection for claim 1.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt Urick whose telephone number is (571) 272-0805. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MTV

*Robert M. Beauchamp, Jr.*  
Robert M. Beauchamp, Jr.  
Patent Attorney  
1000 West 10th Street  
Lawrence, Kansas 66044  
781-841-1111